

NATO Air Power: Lessons Learned from Libya

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Operation Unified Protector, NATO's operation to protect Libyan civilians from the Gaddafi regime in 2011, was so successful that Libya's new government formally requested that NATO maintain its mission even after the National Transitional Council (NTC) declared the country officially liberated on October 23rd. However, the UN Security Council voted to end international military operations in-country, and forces under Unified Protector's mandate were stood down a week later. In the aftermath, the international community's efforts to support the Libyan uprising have been generally seen as a success, no more so than the relentless air operations that severely hampered Gaddafi's forces.

The air operations were initially launched by allied Western states under a UN Security Council Resolution mandate, but NATO assumed responsibility for all military aspects of the UN resolution at the end of March and ran a successful campaign of air strikes, no-fly enforcement, and air support which has been lauded as a key factor in subduing the Gaddafi regime. NATO is now evaluating what it has learned from the Libyan campaign to move forward in the future.

Perhaps inevitably, much attention was paid to the decision to deploy drones over Libya as commentators pointed to their use in yet another theatre as a sign of their overriding importance in modern military operations. Usually referred to as UAVs (Unmanned Aerial Vehicles), drones have become invaluable surveillance and strike platforms in recent years. The US is the trailblazer in terms of UAV technology, but is trying to help NATO to catch up; the UK has already bought armed UAVs from the US, and there are reports that there are negotiations within the US over sales to other NATO members Italy and Turkey. Some of which are capable of being piloted from the other side of the world, UAVs provide a capability to loiter over a target area for a long period of time and provide real-time intelligence and support, and furthermore armed UAVs offer a quick strike capability to their commanders.

This capability was deployed over Libya to great effect, as UAVs provided crucial intelligence on Gaddafi troop movements and a strike platform for NATO forces.

Indeed, NATO recognises that a UAV's potential in terms of its Intelligence, Surveillance, and Reconnaissance (ISR) capabilities is an area where the military is seeing dramatic developments in terms of better equipment, extended loiter time, and enhanced features like stealth technology. This focus on improving UAV technology is spurred on by the fact that, as their use in Libya has shown, commanders recognising that drones will continue to evolve and improve the more they are used in operational scenarios, such as the ability to disarm IEDs on the ground or other types of weaponry and ordnance threatening ground forces. The implications are clear, for as impressive as they are now, UAVs will develop even more capabilities as operators find drones in scenarios where they could play a more active and

decisive role in the future.

The successful use of UAVs in Libya has further proved their status as an invaluable capability. Traditional air power is based on speed, range, and flexibility, but unmanned drones add an important fourth basic characteristic: persistence, or the ability to perform beyond the physical limits of a flight crew. The Libyan campaign has reinforced the fact that UAVs offer military commanders a platform to loiter over a target area and provide real time intelligence, electronic support, and a lethal strike capability for an extended period of time. In fact, NATO's Lieutenant General Friedrich Wilhelm Ploeger – the Deputy Commander of NATO's Allied Air Command Ramstein – claims that unmanned systems' ISR potential has revolutionised the field, and the Libyan campaign has proved that drones will continue to, 'influence the development of tactics, techniques, and procedures,' in NATO.

Given their capabilities, many commentators have touted UAVs as the future of air power and there are claims that unmanned systems will eventually replace manned aircraft, essentially taking the pilot out of the cockpit. NATO's air operations over Libya, however, have gone a long way to proving that the human element is still an irreplaceable element of air operations.

Lt. Gen. Ploeger explains the vital point: UAVs are incredibly effective, but only in uncontested airspace. Their capability to loiter, watch, and strike depends on their ability to operate without being targeted by enemy forces, which in this case would have been the Libyan Air Force. For UAVs to operate effectively, they must be launched into a controlled air environment. As currently envisaged, drones cannot contest and maintain air superiority, nor can they enforce no-fly zones; this makes manned systems as important as ever, as pilots in aircraft take on the key tasks of 'gaining and maintaining air superiority, especially in contested environments.' Pilots in planes are essential for controlling the air environment, enforcing power, and providing a safe arena for the deployment of UAVs.

Another key indicator of the importance of the human element is the decisive role that ground crews such as forward air controllers played in making sure NATO forces were targeting the right people. The Libyan campaign proved that hostile ground forces have recognised the threat posed by UAVs and fighter platforms, and have adjusted their tactics accordingly. Lt. Gen. Ploeger says that NATO saw Gaddafi forces shed their uniforms and their conventional weapon systems when they realised this made them easily identifiable to the eye in the sky. Instead they dressed in civilian clothes and placed their howitzers and mortars on pick-up trucks, making NATO's mission of protecting civilians from State forces much more difficult as they could not tell friend from foe.

However, its Libyan campaign saw NATO enjoy its best ever success rate in terms of avoiding civilian casualties, and Lt. Gen. Ploeger attributes this to the enhanced training of the forward air controllers on the ground and the fact that the technology was shared in real time so both ground and air crews shared the same picture. This networking of the technology capabilities allowed NATO to overcome the challenge of identifying Gaddafi forces by using the ISR platforms for blanket coverage but employing eyes on the ground to confirm friendly and hostile parties.

In fact, this idea of networking capabilities is perhaps the biggest lesson taken away from Libya. UAVs were highly effective, but manned systems are still necessary to control the air space and cover blind spots in the overhead ISR technology. It is becoming evident that a great challenge of the near future will come in the form of effectively merging the capabilities of both manned and unmanned systems to make the best possible use of their potential.

A case in point would be the Joint Strike Fighter (JSF). Lt. Gen. Ploeger makes the point that the JSF will bring an enormous capability to NATO's inventory as a strike fighter, but he is particularly insistent upon the JSF's ability to network with other platforms as one of its most important features. The days of one target in one sortie are gone, because modern aircraft can hit several targets with one sortie. This capability would be further enhanced by the JSF's ability to access real-time intelligence from UAVs and ground controllers as it moves from target to target, constantly ensuring that the targeting is correct as the fighter jet moves between targets.

The prospect of networking capabilities, however, doesn't apply solely to the technological process. The downside to this marked improvement in platform capabilities is that they literally come at a high price, as advancements in technology cost an incredible amount of money. For example, the flip side of the promise of the JSF is that the programme is way behind schedule because of a raft of technical issues, and though it is already the most expensive weapons programme in history the cost is still rising. With the economic forecast looking bleak for the foreseeable future, it is likely that the NATO states who have invested in the JSF programme (including Canada, Denmark, Italy, the Netherlands, Norway, Turkey, and the UK) may need to account for budget cuts and diverted funding by targeting their investments in a much narrower fashion in future.

It would also seem that NATO has learned these lessons about the cost and networkability of its air power capabilities through a reliance on American support throughout the Libyan campaign. Lt. Gen. Ploeger is quick to acknowledge the contribution of US forces to NATO's success in terms of ISR platforms, refuelling capabilities, and low collateral damage weapons – areas in which he admits that the European NATO states have a weak hand. This would seem to tally with reports that the UAVs operating over Libya were primarily American drones, underlining the US' desire to sell UAVs to its NATO allies in order to share the burden for their use. Though we have seen that manned systems are still integral to air operations, it is true that unmanned systems are the most dynamic and promising area of air power R&D at the moment and NATO will be eager to get involved. However, the huge costs associated with air power technology may mean that each state cannot invest comprehensively across the board for their capabilities in future, and instead will have to focus their resources on one element or another of the air power portfolio.

The Libyan campaign seems to have shown that effectively networking the capabilities of its platforms will be one of NATO's greatest challenges in the coming years. The evolution of technology in both drones' ISR and in fighters' capabilities will continue apace and offer an even broader range of capabilities, but it may well be the case that NATO's member states need to work out an effective, flexible, and comprehensive strategy of specialisation to ensure that time, money, and expertise is invested in the right way. NATO may need to ensure that its member states are each specialising on a vital component of the collective air operations arsenal,

possibly seeing different countries involved in future operations depending on the task at hand. Of course, this would need to be a carefully managed process to ensure that no one state becomes spread too thin whilst others pump money into a seldom-used capability or specialisation, but it is clearly a concern for NATO that continuing military development in such turbulent financial times could necessitate the mandating of specialisations to individual states.

NATO ran a successful air operations campaign during its involvement in Libya, and it has taken on board some important developments. Its ISR capabilities are incredible and will continue to improve, and UAVs will likely play a more active role in future as they develop according to operational needs. Manned systems are still of the utmost importance in gaining and maintaining control of an airspace, as well as launching attacks. The human element will continue to be invaluable as enemy forces try to confuse the eye in the sky, as ground controllers will seek to verify the intelligence from UAVs to positively identify targets and civilians. The challenges of the immediate future will revolve around ensuring that all these components work together to fully make the most of their potential, as NATO looks to use these capabilities in tandem to achieve its missions with unerring accuracy. Inherent in this challenge will be meeting the cost of developing and implementing such capabilities, and may turn NATO back into an Alliance of necessity as its member states rely on sharing the financial burden through a system of specialisation and common procurement.

Essentially, NATO will have to try hard in the future to make sure that it is working to its fullest potential by making sure that all of its networks link up smoothly. If it can do so, then its air power may become an even more formidable force in the future.